MATH 348 Reading Questions

Sections 4.1–4.2, part 2

NAME _____

Re-read Section 4.1, and finish reading Section 4.2. Answer the following questions. This sheet will be checked for completeness at the beginning of the next class.

1. How does the proof of Theorem 4.6 rely on a surjective map from $[0, 1]$ to S^0?

2. Restate Theorem 4.7 in your own words. Have you seen this theorem before? In what math class did you see it?

3. What does it mean if a function is *bounded*?

4. What is a *finite refinement* of an open cover?

5. If $f : S \to T$ is a continuous function between topological spaces and S is compact, then what can you conclude about the image of f?

6. What does the *Heine-Borel Theorem* state?